

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

1. (Original) An optical gas sensor for determining a gas in a gas mixture, comprising:

- a radiation source for emitting a radiation;
- a substrate; and
- a sensitive layer positioned on the substrate, wherein:
 - the sensitive layer is porous, and
 - the sensitive layer contains particles that are optically transparent to the radiation emitted from the radiation source and that lengthen an optical path of the radiation.

2. (Previously Presented) An optical gas sensor for determining a gas in a gas mixture, comprising:

- a radiation source for emitting a radiation;
- a substrate; and
- a sensitive layer positioned on the substrate, wherein:
 - the sensitive layer is porous,
 - the sensitive layer contains particles that are optically transparent to the radiation emitted from the radiation source and that lengthen an optical path of the radiation, and the optical gas sensor is for determining a gas component of air.

3. (Previously Presented) An optical gas sensor for determining a gas in a gas mixture, comprising:

- a radiation source for emitting a radiation;
- a substrate; and

a sensitive layer positioned on the substrate, wherein:

the sensitive layer is porous,

the sensitive layer contains particles that are optically transparent to the radiation emitted from the radiation source and that lengthen an optical path of the radiation, and the particles include one of a quartz and a PMMA.

4. (Original) The optical gas sensor according to claim 1, wherein:

each of the particles has a diameter of 3 to 20 μm .

5. (Previously Presented) An optical gas sensor for determining a gas in a gas mixture, comprising:

a radiation source for emitting a radiation;

a substrate; and

a sensitive layer positioned on the substrate, wherein:

the sensitive layer is porous,

the sensitive layer contains particles that are optically transparent to the radiation emitted from the radiation source and that lengthen an optical path of the radiation, and the particles are hollow.

6. (Original) The optical gas sensor according to claim 1, wherein:

each of the particles is at least partially coated on a surface thereof with a material that is sensitive to the gas.

7. (Original) The optical gas sensor according to claim 6, wherein:

the material that is sensitive to the gas includes tetraoctylammonium hydroxide.

8. (Currently Amended) The optical gas sensor according to claim 6, wherein:

the material that is sensitive to the gas includes polydimethylsiloxane.

9. (Currently Amended) The optical gas sensor according to claim 6, wherein:

the material that is sensitive to the gas is free of a plasticizer.

10. (Original) The optical gas sensor according to claim 6, wherein:
the sensitive layer includes gaps between the particles, and
the sensitive layer includes up to 25 volume% of the material that is
sensitive to the gas.
11. (Original) The optical gas sensor according to claim 1, wherein:
the sensitive layer has a layer thickness of 20 to 100 μm .
12. (Previously Presented) An optical gas sensor for determining a gas in a gas
mixture, comprising:
a radiation source for emitting a radiation;
a substrate; and
a sensitive layer positioned on the substrate, wherein:
the sensitive layer is porous,
the sensitive layer contains particles that are optically transparent to the
radiation emitted from the radiation source and that lengthen an optical path of
the radiation, and the substrate includes a detector.
13. (Original) A method of using a sensor including a radiation source for
emitting a radiation, a substrate, and a sensitive layer positioned on the substrate, the sensitive
layer being porous, the sensitive layer containing particles that are optically transparent to the
radiation emitted from the radiation source and that lengthen an optical path of the radiation,
the method comprising the step of:
determining a presence of at least one of CO_2 , NO_x , SO_2 , SO_3 , NH_3 , CO , HCN , and a
halogen hydrogen compound.
14. (Previously Presented) The optical gas sensor according to claim 1, wherein:
the particles of the sensitive layer are water-insoluble.